

**ORGANIC AND CONVENTIONAL INSECTICIDE EFFICACY FOR
SPOTTED WING DROSOPHILA, *DROSOPHILA SUZUKII***

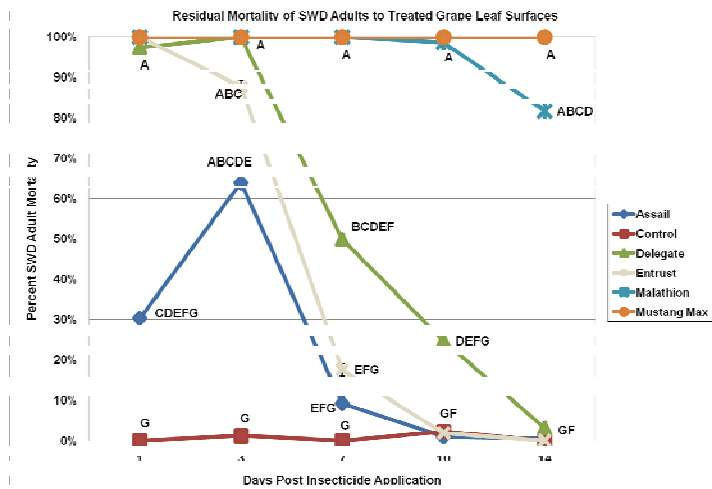
Jimmy Klick, Joseph R. Kleiber and Denny J. Bruck
USDA-ARS Horticulture Crops Research Laboratory
3420 N.W. Orchard Ave, Corvallis, OR 97330
JimmyKlick@gmail.com; Kleibjr@gmail.com; Denny.Bruck@ars.usda.gov

Since the first appearance of the Spotted Wing Drosophila (SWD), *Drosophila suzukii*, in 2008 in California, it has become a global pest on small and stone fruit throughout the United States and in Europe. Adult flies oviposit into ripe and ripening fruit. Subsequent larvae feed on the interior of the fruit, rendering it unsalable and reducing shelf-life.

We examined efficacy of various organic and conventional insecticides on a variety of crops (strawberry, blackberries, red raspberries, blueberries, peaches and winegrapes) in the Willamette Valley. Each treatment was replicated four times in a randomized complete block design. Because of grower unwillingness to leave areas of the field untreated, we were not able to have an untreated control plot. Alternatively, we sampled foliage from the field prior to pesticide application to confirm that untreated leaves were not toxic to SWD. Crops received a directed spray application to both sides of each row. Data were collected from the middle section of the center row. Plot length was 40 feet, to allow for uniform spray application down each row. Treatments were applied at the high labeled rate with a hand-held CO₂-powered sprayer applying 50 gallons of water per acre. We made one application of each treatment. The timing of the application was determined by evidence of an active SWD population in the field using apple cider vinegar bait traps and the presence of ripening fruit. The residual activity of the pesticide treatments were made at approximately 1, 3, 7, 10 and 14 days by exposing SWD adults to previously treated leaf surfaces in the laboratory. Because growers were proactive in their spray programs there were not active SWD populations in the field to evaluate the effect of the various pesticides on SWD populations in the field.

Summary of 2010 SWD Field Trials (summary for all small fruits)

- Mustang Max provided 14+ days of residual control
- Malathion provided 7-10 days of residual control
- Delegate (Radiant) provided 5-7 days of residual control
- Entrust provided 3-5 days of residual control
- Pyganic provided no residual control
- Neonicotinoids are not effective against adult SWD
- Attractants did not affect control, nor did it alter insecticide chemistries



* Percentages of adult mortality with different letters per day on the same day statistically different ($P < 0.05$).